Applicant : Gupta et al.
Serial No. : 10/812,568
Filed : March 30, 2004

Page : 2 of 12

## Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

## Listing of Claims:

1. (Currently Amended) An organic electronic device, comprising:

a deposition surface having at least one deposition region defined thereon,—wherein each deposition region is formed by a pecket in a layer of resist;

a plurality of organic layers, wherein each said organic layer is in said deposition region on said deposition surface and a first portion of at least one of said organic layers is cross-linked so that the first portion is insoluble in an organic solution, and the first portion includes one of a silane, an ester, a di-aromatic bromide, a photo-acid, an amide, an amine, a multivalent cation, or an acidic group as a cross-linking material.

- (Previously Presented) A device according to claim 1 wherein said plurality of
  organic layers includes at least a first organic layer and a second organic layer, the first organic
  layer being closer to the deposition surface than the second organic layer and the first organic
  layer being a cross-linked organic layer.
- (Previously Presented) A device according to claim 2 wherein said plurality of organic layers includes a hole transport layer.
- 4. (Previously Presented) A device according to claim 3 wherein at least one layer of said plurality of organic layers is capable of performing at least one of a hole blocking function, an electron blocking function, an electron transport function, a hole transport function, an optical confinement/wave-guiding function, an electron injection function, a hole injection

Applicant : Gupta et al. Serial No. : 10/812,568 Filed : March 30, 2004

Page : 3 of 12

function, an emission function, an absorption function, or a chemical, physical or photophysical sensor function.

## (Canceled)

- (Previously Presented) A device according to claim 1 wherein at least one of the organic layers is formed from an organic solution that includes cross-linking groups.
- (Previously Presented) A device according to claim 1 wherein at least one of the organic layers is formed from an organic solution that includes an initiating agent.

## (Canceled)

- (Previously Presented) A device according to claim 1 wherein said organic electronic device is an OLED device.
- (Previously Presented) A device according to claim 9 wherein said deposition surface is a lower electrode layer.
- 11. (Previously Presented) A device according to claim 10 wherein at least one of said plurality of organic layers is an emissive layer, said emissive layer emitting light upon charge recombination.
- (Original) A device according to claim 11 further comprising a cathode layer disposed over said plurality of organic layers.
- (Previously Presented) A device according to claim 3 wherein said hole transport layer is fabricated from a PEDOT:PSS solution including constituents capable of cross-linking.

Applicant : Gupta et al.
Serial No. : 10/812,568
Filed : March 30, 2004

Page : 4 of 12

 (Original) A device according to claim 1 wherein said device behaves as an organic transistor.

- (Original) A device according to claim 1 wherein said device behaves as an organic opto-electronic device.
- 16. (Previously Presented) A device according to claim 1 wherein said plurality of organic layers includes at least a first layer and a second layer and the first layer includes a different material from the second layer.
- (Previously Presented) A device according to claim 3 wherein said hole transport layer is configured to perform an electron blocking function.
- (Previously Presented) A device according to claim 3 wherein said hole transport layer is configured to perform a wave-guiding function.
- (Previously Presented) A device according to claim 4 wherein a single organic layer of the plurality of organic layers performs said electron transport and hole blocking functions.
- (Previously Presented) A device according to claim 4 wherein said electron transport function is performed in an organic layer of said plurality of organic layers.
- (Previously Presented) A device according to claim 4 wherein said wave-guiding function is performed in an organic layer of said plurality of organic layers.

Applicant: Gupta et al. Serial No.: 10/812,568 Filed: March 30, 2004

Page : 5 of 12

22. (Previously Presented) A device according to claim 4 wherein said electron injection function is performed in an organic layer of said plurality of organic layers.

(Previously Presented) The device of claim 1, wherein:

the plurality of organic layers includes a hole transport layer, an emissive layer on the hole transport layer, an electron transport layer on the emissive layer and an electrode injection layer on the electron transport layer; and

one of the emissive layer or the electron transport layers is cross-linked.

- (Currently Amended) The device of claim 2, wherein at least one of the first and second organic layers is an emitting layer or a light detecting layer contains a light-responsive material.
- (Previously Presented) The device of claim 1, wherein the deposition surface includes an electrode.
  - (Previously Presented) An organic electronic device, comprising:
     a deposition surface; and

a plurality of organic layers, wherein a first portion of said organic layers is cross-linked to render said first portion of said organic layers insoluble;

wherein at least one cross-linking agent in the first portion adds functionality to the first portion that the first portion does not have without the cross-linking agent.

 (New) The device of claim 26, wherein the functionality added by the crosslinking agent is one of hole transport, electron transport, electron injection, hole blocking, optical confinement or waveguiding.

Applicant : Gupta et al.
Serial No. : 10/812,568
Filed : March 30, 2004

Page : 6 of 12

 (New) The device of claim 27, wherein at least one of the first and second organic layers is an emitting layer or contains a light-responsive material.

- 29. (New) The device of claim 26, wherein said plurality of organic layers includes at least a first organic layer and a second organic layer, the first organic layer being closer to the deposition surface than the second organic layer and the first organic layer being a cross-linked organic layer.
- 30. (New) The device of claim 29, wherein said plurality of organic layers includes a hole transport layer.
- (New) The device of claim 30, wherein said hole transport layer is fabricated from a PEDOT:PSS solution including constituents capable of cross-linking.
- (New) The device of claim 30, wherein said hole transport layer is configured to perform an electron blocking function.
- (New) The device of claim 30, wherein said hole transport layer is configured to perform a wave-guiding function.
- (New) The device of claim 33, wherein said electron injection function is performed in an organic layer of said plurality of organic layers.
- 35. (New) The device of claim 33, wherein said wave-guiding function is performed in an organic layer of said plurality of organic layers.
- 36. (New) The device of claim 30, wherein at least one layer of said plurality of organic layers is capable of performing at least one of a hole blocking function, an electron

Applicant : Gupta et al. Serial No. : 10/812,568 Filed : March 30, 2004

Page : 7 of 12

blocking function, an electron transport function, a hole transport function, an optical confinement/wave-guiding function, an electron injection function, a hole injection function, an emission function, an absorption function, or a chemical, physical or photophysical sensor function.

- 37. (New) The device of claim 36, wherein a single organic layer of the plurality of organic layers performs said electron transport and hole blocking functions.
- 38. (New) The device of claim 36, wherein said electron transport function is performed in an organic layer of said plurality of organic layers.
- (New) The device of claim 26, wherein at least one of the organic layers is formed from an organic solution that includes cross-linking groups.
- (New) The device of claim 26, wherein at least one of the organic layers is formed from an organic solution that includes an initiating agent.
- 41. (New) The device of claim 26, wherein said organic electronic device is an OLED device.
- 42. (New) The device of claim 41, wherein said deposition surface is a lower electrode layer.
- 43. (New) The device of claim 42, wherein at least one of said plurality of organic layers is an emissive layer, said emissive layer emitting light upon charge recombination.
- (New) The device of claim 43, further comprising a cathode layer disposed over said plurality of organic layers.

Applicant : Gupta et al. Serial No. : 10/812,568 Filed : March 30, 2004

Page : 8 of 12

45. (New) The device of claim 26, wherein said device behaves as an organic transistor.

- (New) The device of claim 26, wherein said device behaves as an organic optoelectronic device.
- 47. (New) The device of claim 26, wherein said plurality of organic layers includes at least a first layer and a second layer and the first layer includes a different material from the second layer.
- 48. (New) The device of claim 26, wherein the deposition surface includes an electrode.
  - (New) The device of claim 23, wherein:

the plurality of organic layers includes a hole transport layer, an emissive layer on the hole transport layer, an electron transport layer on the emissive layer and an electrode injection layer on the electron transport layer; and

one of the emissive layer or the electron transport layers is cross-linked.

50. (New) An organic electronic device, comprising:

a deposition surface having at least one deposition region defined thereon, wherein each deposition region is formed by a pocket in a layer of resist; and

a plurality of organic layers including an emissive layer, wherein each said organic layer is in said deposition region on said deposition surface and a first portion of the emissive layer is cross-linked so that the first portion is insoluble in an organic solution.